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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER WONG, XAVIER S				
ART UNIT 2416		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/577,337

Applicant(s)

NAOE ET AL.

Examiner

Xavier Szewai Wong

Art Unit

2416

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28th April 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-23 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 28th April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Information Disclosure Statement

The information disclosure statements submitted on 04.28.06, 03.09.07, 05.22.07, 06.29.07, 07.26.07, 02.25.08, 04.02.08, 06.23.08, 07.17.08, 08.19.08, 08.28.08, 11.20.08 and 04.15.09 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

The abstract of the disclosure is objected to because it contains over 150 words (169) and "means" language. Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "***means***" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections

Claim 7 is objected to because of the following informalities: lines 14-15, delete “first communication means” and “second communication means”; replace with -- *first connection request generating means* -- and -- *second connection request generating means* -- respectively to avoid ambiguity insufficient antecedent basis for these limitations in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 8, 12, 13, 17, 18, 22 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Ozawa et al (JP 1997-224069 A, Ozawa).

Claim 1: Ozawa teaches a transmitter which carries out communication with a receiver by establishing connection of their plurality of communication layers (fig. 1: IrLMP and IrLAP),

the transmitter (fig. 1: device 1) comprising:

connection request generating means (fig. 1: IrLMP 11) for generating a connection request containing a command and data required for connecting a number of contiguously adjacent layers among the plurality of communication layers (fig. 1:

contiguously adjacent layers IrLMP and IrLAP; [0022-23]: from device 1, connection request in step 1 → SNRM frame in step 3 to connect to IrLMP layer 21 of device 2; since connection request in step 1 receives a connection handle response 2 and then begins the "real" connection through SNRM in step 3); and

connection request transmitting means for transmitting the connection request to the receiver (fig. 1: SNRM is sent from device 1 to device 2).

Claim 3: Ozawa teaches connection setting means (fig. 1: IrLAP 12) for carrying out setting for each of the plurality of communication layers according to the response (fig. 1: UA step 6 → connection confirmation step 7), which is received from the receiver as a response to the connection request (fig. 1: connection instruction step 4 & reply step 5).

Claim 4: Ozawa teaches connection setting means (fig. 1: IrLAP 12) for carrying out setting for each of the plurality of communication layers according to the response (fig. 1: connection handle step 2), without receiving the response from the receiver (fig. 1: connection request step 1).

Claims 8 and 18: Ozawa teaches the communication is performed by infrared communication (*abstract*: Infrared).

Claim 12: Ozawa teaches a communication method which carries out communication with a receiver by establishing connection of their plurality of communication layers (fig. 1: IrLMP and IrLAP; devices 1 and 2),

the communication method comprising the steps of:

generating, by connection request generating means (fig. 1: IrLMP 11), a connection request containing a command and data required for connecting a number

of contiguously adjacent layers among the plurality of communication layers (fig. 1: contiguously adjacent layers IrLMP and IrLAP; [0022-23]: from device 1, connection request step 1 → SNRM frame in step 3 to connect to IrLMP layer 21 of device 2; since connection request 1 receives a connection handle response 2 and then begins the “real” connection through SNRM in step 3); and

transmitting, by connection request transmitting means (fig. 1: IrLAP 12 of device 1), the connection request to the receiver (fig. 1: SNRM step 3 is sent from device 1 to device 2).

Claims **13 & 22**: Ozawa teaches a receiver which carries out communication (method) with a transmitter by establishing connection of their plurality of communication layers (fig. 1: device 2 layers IrLAP and IrLMP),

the receiver (fig. 1: device 2) comprising:

connection request receiving means (fig. 1: device 2 IrLAP 22) for receiving a connection request containing a command and data required for connecting a number of contiguously adjacent layers among the plurality of communication layers (fig. 1: SNRM; fig. 6: IrLAP device 1 → SNRM → IrLAP device 2; [0023]);

connection establishing means (fig. 1: device 2 IrLMP 21) for extracting the command and data from the connection request ([0030] lines 1-3: IrLAP 22 outputs a connection *instruction* to IrLMP 21 in step 4 – such that IrLAP 22 can extract the instruction), and establishing connection for the plurality of communication layers based on the command and data ([0030] lines 3-6: connection response step 5, then an unnumbered acknowledgement in step 6 is sent to device 1 to indicate successful connection).

Claim 17: Ozawa teaches a receiver which carries out communication (method) with a transmitter by establishing connection of their plurality of communication layers (fig. 1: device 2 layers IrLAP and IrLMP),

the receiver (fig. 1: device 2) comprising:

connection request receiving means (fig. 1: device 2 IrLAP 22) for receiving a connection request containing a command and data required for connecting a number of contiguously adjacent layers among the plurality of communication layers (fig. 1: SNRM; fig. 6: IrLAP device 1 → SNRM → IrLAP device 2; [0023]); or

a connection request containing a command and data required for establishing connection of one of the plurality of communication layers (fig. 1: connection request step 1 – since out of the plurality of two contiguously adjacent layers IrLMP and IrLAP exist in this example, the connection request is setting up only with one layer, which is IrLAP, out of the two layers); and

connection establishing means (fig. 1: device 2 IrLMP 21) for extracting the command and data from the connection request ([0030] lines 1-3: IrLAP 22 outputs a connection *instruction* to IrLMP 21 in step 4 – such that IrLAP 22 can extract the instruction), and establishing connection for the plurality of communication layers based on the command and data ([0030] lines 3-6: connection response step 5, then an unnumbered acknowledgement in step 6 is sent to device 1 to indicate successful connection).

Claim 23: Ozawa teaches a communication system includes a transmitter and a receiver which carry out communication by establishing connection of their plurality of communication layers (fig. 1; *abstract*),

the transmitter (fig. 1: device 1) comprising:

connection request generating means (fig. 1: IrLMP 11) for generating a connection request containing a command and data required for connecting a number of contiguously adjacent layers among the plurality of communication layers (fig. 1: contiguously adjacent layers IrLMP and IrLAP; [0022-23]: from device 1, connection request step 1 → SNRM frame in step 3 to connect to IrLMP layer 21 of device 2; since connection request 1 receives a connection handle response 2 and then begins the “real” connection through SNRM in step 3); and

connection request transmitting means (fig. 1: IrLAP 12 of device 1) for transmitting the connection request to the receiver (fig. 1: SNRM step 3 is sent from device 1 to device 2),

the receiver (fig. 1: device 2) comprising:

connection request receiving means (fig. 1: device 2 IrLAP 22) for receiving a connection request containing a command and data required for connecting a number of contiguously adjacent layers among the plurality of communication layers (fig. 1: SNRM; fig. 6: IrLAP device 1 → SNRM → IrLAP device 2; [0023]);

connection establishing means (fig. 1: device 2 IrLMP 21) for extracting the command and data from the connection request ([0030] lines 1-3: IrLAP 22 outputs a connection *instruction* to IrLMP 21 in step 4 – such that IrLAP 22 can extract the instruction), and establishing connection for the plurality of communication layers based on the command and data ([0030] lines 3-6: connection response step 5, then an unnumbered acknowledgement in step 6 is sent to device 1 to indicate successful connection).

Claims **6** and **16** are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi (JP 1998-107737 A).

Claim **6**: Takahashi teaches a transmitter which carries out communication with a receiver by establishing connection of their plurality of communication layers (abstract solution: IrLMP and IrLAP layers),

the transmitter (fig. 5: IR transmitter) comprising:

disconnection request generating means (fig. 5: element 61) for generation a disconnection request containing a command and data required for disconnecting a number of contiguously adjacent layers among the plurality of communication layers ([0052] lines 4-9: IrLMP level sends a disconnection data frame request); and

disconnection request transmitting means for transmitting the disconnection request to the receiver ([0053]: transmitter A sends disconnection request to receiver B).

Claim **16**: Takahashi shows a receiver which carries out communication with a transmitter by establishing connection of their plurality of communication layers (abstract solution: IrLMP and IrLAP layers),

the receiver (fig. 4: receiver B) comprising:

disconnection request receiving means (fig. 4: IrLAP section of B) for receiving a disconnection request containing a command and data required for disconnecting a number of contiguously adjacent layers among the plurality of communication layers ([0019]: DISC-Frame 37; [0053]: DISC-Frame 13); and

disconnecting means (fig. 4: IrLMP section of B) for extracting the command and data from the disconnection request ([0020]: Disconnect Indication 38 comprises command

for disconnection; fig. 12: (38); [0058]: data command for disconnection indicated), and carrying out disconnection for the plurality of communication layers based on the command and data ([0021]: Unnumbered Acknowledgement Frame acknowledges disconnection completion).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims **2** and **14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa et al (JP 1997-224069 A, Ozawa) in view of Krishnamurthy et al (US 7363534 B1, Krishnamurthy).

Claim **2**: Ozawa teaches the connection request generating means yet not exactly "a command for requesting the receiver to transmit a response with respect to the connection request." Krishnamurthy teaches a command for requesting the receiver to transmit a response with respect to the connection request (col. 7 lines 51-65: LCP Configure-Request that comprises of *authentication* protocol; wherein *authentication* is interpreted to be requiring a reply from a partner to check for compatibility). It would have been obvious to one of ordinary skill in the art when the invention was created to modify the connection request of Ozawa to include a command for requesting the receiver to transmit a response with respect to the connection request as taught by Krishnamurthy to ensure link-layers are connected without error.

Claim **14**: Ozawa teaches response transmitting means for transmitting a response yet not exactly "in case when the connection request contains a command for requesting transmission of response to the connection request." Krishnamurthy teaches in case when the connection request contains a command for requesting transmission of response to the connection request (col. 7 line 66 – col. 8 line 10 & 44-45: LCP Configure-Ack responds to the Configure-Request for configuration compatibility and authentication). It would have been obvious to one of ordinary skill in the art when the invention was created to modify the response transmitting means of Ozawa to respond in case a

command for requesting the receiver to transmit a response to the connection request as taught by Krishnamurthy to ensure link-layers are connected without error.

Claims **5** and **15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa et al (JP 1997-224069 A, Ozawa) in view of Pettus et al (US 5515508, Pettus).

Claim **5**: Ozawa teaches the transmitter comprising the connection request generating means (fig. 1: IrLAP 12) yet not expressively "a command for requesting the receiver to transmit a response during data exchange." Pettus teaches a command for requesting the receiver to transmit a response during data exchange (col. 18 lines: 30-46: service request ... "streamed" onto the data stream to a remote node). It would have been obvious to one of ordinary skill in the art when the invention was created to implement a function to send a command for requesting the receiver to transmit a response during data exchange as taught by Pettus into connection request generating means to allow dynamic configuration of protocol stacks between two devices.

Claim **15**: Ozawa teaches the receiver comprising response transmitting means for transmitting a response (fig. 1: IrLAP 22 → UA step 6) yet not expressively "in case where the connection request contains a command for requesting transmission of response during data exchange." Pettus teaches sending a response in case where the connection request contains a command for requesting transmission of response during data exchange (col. 19 lines 5-13: if a reply is required... dispatcher inserts reply onto a data stream... forwards to client node). It would have been obvious to one of ordinary skill in the art when the invention was created to implement a function to detect in case where the

connection request contains a command for requesting transmission of response during data exchange as taught by Pettus into the response transmitting means to allow dynamic configuration of protocol stacks between two devices.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa et al (JP 1997-224069 A, Ozawa) in view of Elzur (US 2003/0169744 A1) and in further view of Ichimi (US 6865687 B1).

Claim 7: Ozawa teaches a communication system includes a transmitter and a receiver which carry out communication by establishing connection of their plurality of communication layers (fig. 1; *abstract*),

the transmitter (fig. 1: device 1) comprising:

first connection request generating means (fig. 1: IrLMP 11) for generating a connection request containing a command and data required for connecting a number of contiguously adjacent layers among the plurality of communication layers (fig. 1: contiguously adjacent layers IrLMP and IrLAP; [0022-23]: from device 1, connection request step 1 → SNRM frame in step 3 to connect to IrLMP layer 21 of device 2; since connection request 1 receives a connection handle response 2 and then begins the "real" connection through SNRM in step 3); and connection request transmitting means for transmitting to the receiver the connection request generated (fig. 1: IrLMP 11 sends SNRM step 3).

Yet, "*second* connection request generating means for generating a connection request containing a command and data required for connection *one of the plurality of* communication layers; and

[connection request transmitting means] transmitting to the receiver the connection request generated by the *first or second connection request generating means*."

Elzur teaches second connection request generating means (fig. 2: hardware module 20) for generating a connection request containing a command and data required for connection one of the plurality of communication layers ([0006] line 3: set-up request; [0020] lines 6-10: route the incoming packet to the appropriate software layer);

connection request transmitting means (fig. 2: hardware module output port towards the layers) transmitting to the receiver the connection request generated by the first or second connection request generating means ([0018] lines 24-35: tests layer to see if it is appropriate layer before selecting layer to route towards). It would have been obvious to one of ordinary skill in the art when the invention was created to implement the second connection request generating means and to transmit to the receiver the connection request generated by the first or second connection request generating means selected by the selecting means as taught by Elzur to the transmitter device of Ozawa to provided the different types of connections requested.

Yet, "selecting means for selecting either of the first connecting means and the second connecting means and the second connecting means so as to generate the connection request; and the first and second connection request generating means *selected by the selecting means*" are not exactly mentioned.

Ichimi teaches selecting means (fig. 5: line selector 51) for selecting either of the first connecting means and the second connecting means and the second connecting

means so as to generate the connection request (col. 5 lines 14-27: selector); and the first and second connection request generating means *selected by the selecting means* (col. 5 lines 17-21 & 29-34: first or second physical layer is selected for connection). It would have been obvious to one of ordinary skill in the art when the invention was created to add a selector as taught by Ichimi to select between the first and second connection request generating means of Ozawa, in combination with Elzur, in order to provide the different types of connections requested and allow communication continue.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa et al (JP 1997-224069 A, Ozawa) in view of Salokannel et al (US 2005/0014468 A1, Salokannel).

Claim 9: Ozawa teaches the transmitter but not exactly as "a mobile phone." Salokannel depicts a mobile phone (fig. 1: 110) transmitting infrared signals to receiving devices ([0027]: Bluetooth, infrared is traditionally used). It would have been obvious to one of ordinary skill in the art when the invention was created to implement the infrared layer communication structure as taught by Ozawa into the mobile phone of Salokannel to ensure connection between the transmitter/phone and receiver is in sync.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa et al (JP 1997-224069 A, Ozawa) in view of Chen et al (US 2003/0107651 A1, Chen).

Claim 10: Ozawa teaches the transmitter but not exactly as "an image-capturing device which transmits a captured image to the receiver." Chen teaches an image-

capturing device which transmits a captured image to the receiver in an infrared communication environment (fig. 3: digital camera sending a JPEG image to a printer receiver; [0031]). It would have been obvious to one of ordinary skill in the art when the invention was created to implement the infrared layer communication structure as taught by Ozawa into the digital camera of Chen to ensure connection between the transmitter/camera and receiver/printer is in sync.

Claims **11, 19, 20** and **21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa et al (JP 1997-224069 A, Ozawa) in view of Tada et al (US 2004/0081436 A1, Tada).

Claims **19 & 20**: Ozawa teaches the receiver yet not expressively as "a broadcast receiving and recording device which receives and records broadcast received from the transmitter." Tada teaches a recording-receiving device which receives and records broadcast received from the transmitter ([0071]: a digital-broadcast-sending/receiving unit 1 that connects to an antenna ANT; a recording unit 2 that functions as a recording device). It would have been obvious to one of ordinary skill in the art when the invention was created to modify the receiver of Ozawa to implement the receiving-recording functions for broadcast contents as taught by Tada for facilitating recording live contents streamed on television, as an example.

Claims **11 & 21**: Ozawa teaches the transmitter and receiver yet not "computer programs causing a computer to function as the respective means of the transmitter or the respective means of the receiver." Tada teaches computer programs causing a

computer to function as the respective means of the transmitter or the respective means of the receiver ([0071]: a digital-broadcast-sending/receiving unit 1 that connects to an antenna ANT – thus, the unit can be programmed to become a sending or receiving unit). It would have been obvious to one of ordinary skill in the art when the invention was created to modify the transmitter and receiver of Ozawa to implement computer programs to function as the respective means of the transmitter or the respective means of the receiver as taught by Tada as the flexibility of allowing a device to become a receiver (e.g. for reproducing and recording contents) and a transmitter (e.g. for providing contents).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Kalofonos, US 2006/0291502 A1: socket connection setup between client and server at virtual layers
2. Kurihara, US 6006294: small scale and large scale memory usage in data transmission and reception in infrared environment
3. Nykänen, US 5706110: connection and disconnection among Infrared layers
4. Pinkerton et al, US 2005/0091413 A1: offload request traverses adjacent software layers in a network stack

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xavier Wong whose telephone number is 571.270.1780. The examiner can normally be reached on Monday through Friday 8:30 am - 6:00 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571.272.3174. The fax phone number for the organization where this application or proceeding is assigned is 571.273.8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866.217.9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800.786.9199 (IN USA OR CANADA) or 571.272.1000.

/Xavier Szewai Wong/
x.s.w
13th May 2009

/Seema S. Rao/
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